USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

4/6

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

5/6

USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

6/6

USSR   UDC: 621.396.69:621.316.826

AFANAS'YEV, B. K., VOL'FSON, I. B., KARACHENTSEV, A. Ya., PEL'TSMAN, I. D.,
POMUKHIN, N. P., CHERNYAVSKIY, Yu. M.

"Experience in Developing an Automated Production Line for SN1-1-1 Varistors"

Translation: The authors describe a line which excels the level of the
best known models in its technological characteristics, level of automation
and the number of operations performed. The principle of unification was
extensively utilized in designing the line. The line is equipped with a
system for accumulating and processing data on the course of the techno-
logical process. Resumé.

1/1

Reliability Theory

USSR

UDC: 621.396.6.002:658.5

POMUKHIN, N. P., SKUDARNOV, M. Ye., KUZ'MIN, G. M., CHERNYAVSKIY, Yu. M.,
POKROVSKIY, V. P.

"A Data Collection and Processing System for Operational Control of Radio
Component Production Lines"

Elektron. tekhnika. Nauchno-tekhn. sb. Tekhnol. i organiz. proiz-va (Elec-
tronic Technology. Scientific and Technical Collection. Technology and Or-
ganization of Production), 1970, vyp. 4 (36), pp 94-101 (from RZh-Radio-
tekhnika, No 12, Dec 70, Abstract No 12V331)

Translation: The system makes it possible to monitor the operation of
equipment, to take account of the number of good and rejected articles,
to check their quality, to check on the course of technological processes,
to give a light-panel display on the course of plan fulfilment, and to
collect statistical data on operation of the line with electric typewriter
printout. Resumé.

1/1

USSR

SKVORTSOV, A. A., Candidate of Technical Sciences, _____, _. G., Candidate of Technical Sciences, KOLASIMA, A. M., Engineer, _____, Candidate of Technical Sciences, CHERNYAVSKIY, _. M., Engineer

"Failure Rate of the Collectors of Traction Motors with a Plastic Case in Operation"

Abstract: A study was made of the nature of operating failures of electric traction motors with a plastic case and causes for other occurrences. A sample of 16 collectors from motors which had been turned in for plant repair was used for the study. The largest number of failures occur at the overlap of the collector plates on the winding side. Problems with the armature rings were also very common. The nature of the damage was studied on collectors from 83,000 to 700,000 km of use. No correlation was discovered between the amount of use and the type of failure.

1/1

USSR

UDC:521.719.2:621.378.9

VOLKONSKIY, V. B., NESTEROVA, Z. V., POPOV, Yu. V., CHERNYAYEV, A. I.,
YAKOVLEV, V. V.

"A Laser Rangefinder with Super-High-Frequency Modulation of Radiation
and Frequency Conversion in the Photoreceptor"

Optiko-Mekhanicheskaya Promyshlennost', No 10, Oct 73, pp 22-25

Abstract: In known light rangefinders with SHF modulation of optical
radiation, phase detection of the signal received is performed in the
light modulator. The operating range of a laser rangefinder can be sig-
nificantly increased by attaching a reflecting film to the object, the
distance to which is to be measured. This article presents the results
of experimental studies of a laser rangefinder with SHF amplitude modula-
tion of the radiation, the modulation frequency convertor in the photo-
receptor and phase detection at low frequency. The laser uses a helium-
neon laser operating at 755 MHz. The maximum range measurement error when
a film reflector is used at a range of 25 m is 0.5 mm, with a signal/noise
ratio of at least 10. Automatic recording of the results of measurements
on a strip-chart recorder is possible.

1/1

- 143 -

Acc. Nr.: _AM 0104115_

Ref. Code: _УЯ0000_

Yushko-Zakharova, O. Ye.; Ivanov, V. V.; Razina, I. S.; Chernyayev, L. A.

Geochemistry, Mineralogy, and Methods for Determination of Elements of the Platinum Group (Geokhimiya, mineralogiya, i metody opredeleniya elementov gruppy platiny) Moscow, "edra, 1970, 199 pp (SL:204h)

TABLE OF CONTENTS:

1/2

REEL/FRAME

19870533

Acc. Nr.   **AM** *0*104115⁻

      The book is beased on authors' works dealing with chemico-spectroscopic
determination of platinum metals, as well as results of ore study in the X-ray
microanalyzer and the JKhA-3A.
      Given are characteristics of about 60 minerals of platinum metals; half
of them were discovered in recent years due to the use of X-ray electron micro-
sounding of ores...

Reel/Frame
19870534

1/2   023
UNCLASSIFIED
TITLE--PROTEIN METABOLISM IN WHEAT DURING THE USE OF 2,4,D -U-   PROCESSING DATE--27NOV70

AUTHOR-(04)-KRISHCHENKO, V.P., KALININ, V.A., MAKHADAD, M., CHERNYAYEV,
N.G.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (5), 102-8

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, PROTEIN METABOLISM, PLANT GROWTH REGULATOR, CHLORINATED
ORGANIC COMPOUND, BENZENE DERIVATIVE, HERBICIDE, CHROMATOGRPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0454   STEP NO--UR/0485/70/000/005/0102/0108

CIRC ACCESSION NO--AP0134222
UNCLASSIFIED

CIRC ACCESSION NO--AP0134222
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,4,D DECREASED THE TOTAL CONTENT
   OF EASILY AND FIFFICULTY SOL. PROTEINS AND INCREASED THE PROPORTION OF
   MODERATELY SOL. PROTEINS IN WHEAT VEGETATIVE MASS. IN PROPORTION TO THE
   GROWTH OF TREATED WHEAT, THE HERBICIDE WAS OBSD. IN ALL THE PROTEIN
   FRACTIONS AND INCREASED IN THE DIFFICULTY SOL. PROTEINS AS THE TOTAL
   AMT. OF 2,4,D DECREASED.   TEAE,CELLULOSE CHROMATOG. OF THE H SUB2 O SOL.
   PROTEIN FRACTION IN THE VEGETATIVE MASS OF PROTEIN FROM WHEAT
   INCORPORATING 2,4,D SHOWED THAT THE HERBICIDES WAS INCORPORATED INTO
   ONLY 1 SUBFRACTION.

UNCLASSIFIED

CHERNYAYEVA, S. A.

COLEEN

29 Oct 71   106   FID:CYBERNETICS

95. USSR

KUDRYAVTSEVA, V. I. and CHERNYAYEVA, S. A.

UDC 612.821.6:612.821.24371.302.2

SO: FOREIGN PRESS DIGEST
29 OCT 1971

"Some Problems of Memory and Teaching"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetics Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 62-74

Abstract: This article examines some results of a study of the formation of time associations in man under the influence of stimuli of different functional importance.

It was shown that with a combination of stimuli having a weak functional effect, time associations that die down rapidly are formed. With a combination of stimuli having a strong functional effect, very stable time associations are formed. The first may be the basis of short-term memory, and the second -- the basis of long-term memory.

1/1

USSR

UDC:621.039.516.338.4

ARSEN'YEV, YU. D., RADCHENKO, S. V., and CHERNYAYEV, V. A.

"Multiparameter Optimization of Nuclear Power Stations With Desalination of Sea Water by the Base Point Method"

Abstract: Dual-purpose desalination installations used with atomic electric power stations are characterized by complex, physically interrelated parameters. Dimensionless complexes summarizing all initial cost and technical indicators can be composed by approximating each expenditure component with an equation. The individual functions can be represented for computer calculation as polynominals, and optimization is performed for each parameter individually with subsequent refinement of the solution by iterations. The system of iterations is constructed so that when one of the parameters is optimized, the optimization depends on the base values of the other parameters but not on the base value of the one being optimized.

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USSR   UDC   539.1.074. 8

CHERNYAYEV, V. B., SOKOLOVA, Z. Ya., Physicotechnical Institute imeni
A. F. Ioffe

"A Neutron Detector"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 36, Soviet Patent No 288172, class 21, filed 31 Jul 69, published
3 Dec 70, p 88

Translation: This Author's Certificate introduces a neutron detector in
the form of a moderator light guide inside of which are coaxial cavities
with a scintillating material. The moderator light guide is covered by a
reflector. As a distinguishing feature of the patent, the effectiveness of
neutron registration is improved by forming the cavities with surfaces of
truncated cones having an identical central solid angle at the exit pupil
of the detector, while the surface of the moderator light guide is in the
shape of a hemisphere. The patent also covers a modification of the de-
tector which is distinguished by the fact that the technology of making it
is simplified by making up the moderator light guide surface from the
surfaces of a cylinder and two truncated cones.

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USSR

CHERNYAYEV, V. B., SOKOLOVA, Z. Ya., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288172, class 21, filed 31 Jul 69, published 3 Dec 70, p 88

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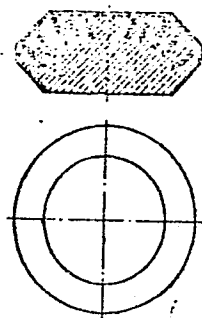
USSR

UDC 539.1.074.8

CHERNYAYEV, V. B. , SOKOLOVA, Z. YA.

"The Part Played by a Reflector in a Scintillation Detector of ZnS(Ag)B10"

Translation: The article deals with the part played by the reflector in a two-dimensional dispersive neutron detector in measuring the layer thickness of the scintillator. It has been experimentally shown that the reflector increases the effectiveness of the neutron registration and changes the differential amplitude spectrum of the detector pulses. Consideration is given to a number of designs of 3-dimensional detectors from the point of view of the effectiveness of neutron registration and the amplitude spectrum of pulses from the photoelectronic multiplier. 5 figures, 8 bibliographic entries.

1/1

USSR   UDC: 621.396.69:621.318.4(088.8)

CHEPARUKHIN, A. M., CHERNYAYEV, V. D.

"A Coil With Controllable Inductance"

USSR Author's Certificate No 270837, filed 10 Oct 68, published 20 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V325 P)

Translation: This Author's Certificate introduces a coil with controllable
inductance which contains a magnetic circuit, a working winding, and a
control winding. To increase control precision, the magnetic circuit is
made in the form of two shell type cores which fit one inside the other
with a clearance in which the tuning core is located. The working winding
is located in the inner shell core, and the control winding is on the
outer lateral surface of this same core.

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USSR   UDC: 577.4

CHERNYAYEV, V. G.

"The Problem of Synthesis of Stable Modular Systems of Asynchronous Automata"

Avtomaty i Upr. [Automata and Control--Collection of Works], Moscow, Nauka Press, 1972, pp 40-44 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V330)

Translation: The problem of construction of a stable system of identical logic elements assuring correct functioning of an asynchronous automaton regardless of variations in delays in the moduli is studied.

1/1

USSR   UDC 577.4

CHERNYAYEV, V. G.

"On the Problem of Synthesizing Stable Modular Circuits for an Asynchronous
Automaton"

V sb. Avtomaty i upr. (Automata and Control -- Collection of Works),
Moscow, "Nauka", 1972, pp 40-44 (from RZh-Matematika, No 11, Nov 72,
Abstract No 11V330)

Translation: The problem of constructing a stable circuit from identical
logical elements to ensure the correct functioning of an asynchronous auto-
maton independent of the spread of the degree of delay in the moduli is
discussed.

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USSR   UDC 621.396.6.019.3

CHERNYAYEV, V. N., OBICHKIN, YU. G., and GUSEV, V. P.

"Approximate Calculation of Reliability of the Process of the Production of
Radioelectronic Equipment on the Basis of Average Group Intensities of Failure
of Its Operations"

Moscow, Nadezhnost' i Kontrol' Kachestva, No 8, 1973, pp 22-27

Abstract: Consideration is given to the possibility of calculating the relia-
bility of the process of the production of radioelectronic equipment prior to
the start of series production. This process is represented as a system con-
sisting of a set of elements which are the production operations, and as the
criterion of reliability of the process is selected the probability of the
dectection of a flaw in output passing rough the adjustment operations and/or
undergoing the acceptance tests. On the basis of such representation, it is
possible a) to construct a graph of change of the parameter of flow of failures
of the production process as a function of time; b) to determine the nature of
distribution cf the catch-up time between failures of the process of production
of the radioelectronic equipment; c) to conduct an approximate calculation of
reliability of the production process prior to initiation of the series pro-
duction of radioelectronic equipment. 4 tables. 2 references.
1/1

USSR

UDC $\boxed{546.821'21'261}:536.631+536.66+536.75$

CHERNYAYEV, V.S., SHVEYKIN, G.P. and GEL'D, P.V., Ural Polytechnic Institute

"Heat Capacity, Entropy, and Enthalpy of Titanium Oxycarbides at Reduced Temperatures"

Abstract: Discussed here is the temperature dependence of the thermal capacity of Ti oxycarbides of a close composition to the quasi-binary section TiC-TiO (i.e. with $x + y \approx 1$). Use was made of a low-temperature adiabatic calorimeter to measure (at 55-300°K) the heat capacity of equiatomic Ti monoxide and monocarbide as well as their relative solid solutions of $TiC_x O_{1-x}$. The entropy, changes in the enthalpies, and the characteristic temperatures of Ti oxicarbides are calculated from the experimental

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USSR

data. It has been possible to approximate the experimental data
on the thermal capacity and entropy of Ti oxicarbides using the
simplest rule of additivity. It is suggested that the linear na-
ture of the relationships between the heat capacities and entro-
pies is related with their tendency to ordering. It is noted that
the regular drop in the characteristic temperatures of Ti oxycar-
bides with the increase of oxygen in them is caused basically by the
increasing screening of M-M interactions. (3 illustr., 2 tables
16 biblio. ref).

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USSR   UDC: 681.325.6

GERASIMOV, V. F., KUZIN, L. T., LETUNOV, Yu. P., CHERNYAYEV, V. V., Moscow
Engineering Physics Institute

"A Device for Simulating the Random Distribution of Priorities in Queueing
Systems"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 27, 1970, Soviet Patent No 280064, Class 42, Filed 28 May 69, p 133

Abstract: This Author's Certificate introduces: 1. A device for simulating
the random distribution of priorities in queueing systems. The device contains
groups of diodes and delay lines and an interrogation flip-flop. As a dis-
tinguishing feature of the patent, the functional possibilities of the device
are extended by using a (1-n)-terminal network in the form of series connected
kipp oscillators with variable time delay, the outputs being connected to the
controlling inputs of the diodes in the channels. The contrc⁻ling input of
the (1-n)-terminal network is connected to the one state of the interrogation
flip-flop, which determines the priority of an application. 2. A modification
of this device distinguished by the fact that provision is made for functional
readjustment of the probability (1-n)-terminal network by using channel flip-
flops whose "zero" outputs are connected to the controlling inputs of the
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USSR

corresponding kipp oscillators, while the "one" outputs are connected to the
controlling inputs of the diodes connected to the inputs of diodes tied to
the following kipp oscillators in the circuit.   3. A modification of this
device distinguished by the fact that provision is made for functional coup-
ling to the channels connected to the device. The inputs are connected through
a shaper amplifier and a delay line to the "zero" inputs of the corresponding
channel flip-flops and to the "one" input of the interrogation flip-flop, and
through diodes to the "one" inputs of the channel flip-flops and to the
"zero" output of the interrogation flip-flop, and also through a resistor
to the voltage supply. 4. A modification of this device distinguished by
the fact that provision is made for determining whether channels are free
(busy). The output of the channel diodes is connected to the delay line,
and the output of the delay line is connected to the main channel diode
output.

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USSR

VVEDENSKIY, V. N., CHERNYAYEV, Ye. N., KRYLOV, I. S., and ROMANOV, S. I.

"Transformation of the Stokes Parameters in Electromagnetic Wave Backscattering" .

Abstract: The purpose of this paper is to establish a connection between the elements of the interaction matrix and the parameters of the scattered field that can be measured in practice with relative ease, where the interaction matrix is the expression of the interaction of the radiation with a reflecting object and can be defined by $\vec{S}_2 = M\vec{S}_1$, where S_2 and $\vec{S}_1$ are the vector parameters of the reflected and incident waves respectively and M is the matrix. The analysis is conducted under the following limitations: the object is irradiated by a plane electromagnetic wave; the polarization transformation is considered for the reflection only; and only the case of reflection is considered in which it is described by linear, homogeneous equations. The computation of the generalized correlation coefficient of the linear orthogonal scatter field components for radiation with arbitrary elliptical
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polarization is given as an example of implementation of the au-
thors' methods. The authors thank Ye. M. Kuchkov for his assidu-
ous attention to the work.

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USSR

UDC 619.576.858.4:576.807.7

CHERNYAYEV, Yu. A., and SOBKO, A. I., All-Union Scientific Research Institute of Foot and Mouth Disease

"Determination of the Correspondence Between Epizootic and Production Strains of Foot-and-Mouth Disease Virus"

Abstract: By applying the reaction of passive hemagglutination, in which stable erythrocyte diagnostic preparations derived from antisera were used, the antigenic correspondence between epizootic strains of the virus of foot-and-mouth disease and production strains of this virus used in specific pro-phylaxis was determined. Determinations were reliable and preferrable to those carried out by other methods because of the short time (2.5-3 hrs) required for a determination.

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USSR   UDC 619:576.858.4-807.7

CHERNYAYEV, Yu. A. and SOBKO, A. I., All-Union Scientific Research Foot-and-Mouth Disease Institute

"The Passive Hemagglutination Test to Identify Foot-and-Mouth Disease Virus"

Abstract: Formolized, tannin-treated sheep erythrocytes treated with hyper-immune guinea pig serums in the presence of bis-diazobenzidine are aggluti-nated upon contact with homologous foot-and-mouth disease antigen. The reaction is sufficiently specific to permit determination of the type and variant of the virus. It is more sensitive than the complement fixation reaction. The agglutination is best detected when the test is run in special plates possessing wells with a conical bottom because the agglutinates are very small (they have only 2 or 3 erythrocytes). The formation of such agglutinates requires a very small amount of antigen. This accounts for the high sensitivity of the reaction. Formolized and tannized erythrocytes can be stored for 6 to 12 months and sensitized erythrocytes for 1 to 6 months.
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AA0052666

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, /-70

UR 0482

241390 SPRING FORMING MACHINE for serpent like
springs can be easily reset for different
sizes and types. The discs 4 with radical slots
are mounted on parallel shafts 1 and 2 which rotates
in bearings, mounted in the body of the machine 3.
The studs 5 with rollers 6 aresecured in the disc
slots. Shaft 1 is coupled to a reducer 8 and
motor 9. Equal size gears 7 are fitted to shafts.
End of the strip 10 is fixed around one of the
rollers 6. The discs are rotated in the opposite
directions. The strip is tensioned (11) and
formed into loops. The size of loops and the pitch
of spring can be regulated by moving the rollers
in slots.
19.7.66. as 1092020/25-27, CHERNYCH, V.P. and
BUSHMAKIN, A.N. Bereznytovsky Ti-Mg Plant.
(1.9.69) Bul. 14/18.4.69. Class 7d, Int. Cl.
B 21f.

½

19821417

/8

AA0052666

Chernykh, V. P.; Bushmakin, A. N.
Bereznikovskiy Titano-Magniyevyy Kombinat
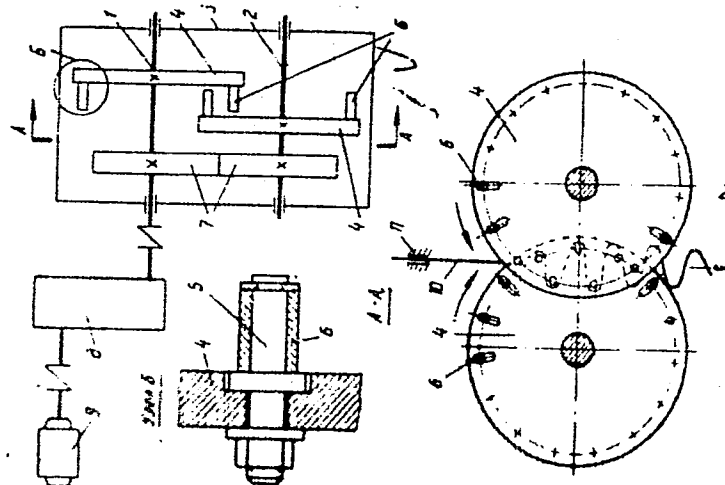
19821418

1/2   028   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CHANGE IN THE ACTIVITY OF ACID PHOSPHATASE IN THE LIVER DURING THE
   RADIATION INJURY OF ANIMALS WITH VARYING RADIOSENSITIVITY -U-
AUTHOR--CHERNYKH, A.B.

COUNTRY OF INFO--USSR

SOURCE--VESTN. AKAD. NAUK KAZ. SSR 1970, 26(1), 50-2

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACID PHOSPHATASE, LIVER, RADIATION BIOLOGIC EFFECT, GUINEA
   PIG, HAMSTER, ORGAN REGENERATION, ESTERASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0452
                                STEP NO--UR/0031/70/026/001/0050/0052
CIRC ACCESSION NO--AP0117688
                          UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACID PHOSPHATASE ACTIVITY HAS BEEN
STUDIED IN LIVER OF RADIOSENSITIVE ADULT MALE GUINEA PIGS (LD SUB50-30
EQUALS 400 R) AND COMPARATIVELY RADIORESISTANT MALE GOLDEN HAMSTERS (LD
SUB50-30 EQUALS 900 R). ANIMALS WERE IRRADIATED ONCE AT A DOSE RATE OF
180 R PER MIN, AT DOSES OF 100, 200, AND 400 R FOR GUINEA PIGS AND 400
AND 1000 R FOR HAMSTERS. ACID PHOSPHATASE WAS DETD. 2, 4, AND 24 HR
AFTER IRRADN. IN GUINEA PIGS, DURING THE FIRST 2 HR AFTER IRRADN., ACID
PHOSPHATASE ACTIVITY DROPPED SHARPLY AND THEN GRADUALLY INCREASED,
REACHING A MAX. AFTER 24 HR. THE GREATEST INCREASE IN ACTIVITY WAS
OBSERVED AFTER 24 HR, AT A DOSE OF 200 R. IN GOLDEN HAMSTERS, WHILE
ACID PHOSPHATASE ACTIVITY DECREASED SLIGHTLY DURING THE FIRST 2 HR, IT
REMAINED STABLE IN THE PERIOD BETWEEN 2 AND 4 HR AND THEN GRADUALLY
INCREASED TO LEVELS FAR ABOVE CONTROL LEVELS. IT IS CONCLUDED THAT
INCREASED ACID PHOSPHATASE ACTIVITY IN REGENERATING LIVER LEADS TO
FORMATION OF INORG. PHOSPHATES AND PREPARES ESTERASE SUBSTRATES. THE
HIGHER RADIO RESISTANCE OF THE HAMSTERS IS THEREFORE ASSUMED TO BE
ASSOCD. WITH A LOW LEVEL OF CELL SYNTHESIS, AS INDICATED BY THE LOW FREE
ACID PHOSPHATASE CONTENT OBSERVED.

UNCLASSIFIED

USSR   UDC 616-092.9

CHERNYKH, A. M.

"Modeling as a Means of Studying the Mechanisms of Disease and Recovery"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1970, pp 9-16

Abstract: Almost from the beginning of experimental medicine, the principal method for studying the mechanisms of disease and recovery has been the creation of models of various pathological processes, states and symptoms of disease in laboratory animals. The use of models is more widespread at present than even before because of the development of cybernetics, electronics and some branches of mathematics. The complexity of the problem has stimulated considerable thinking on the part of Soviet medical theorists and their views are briefly described in the article. On the basis of work in modeling some general pathological processes (inflammation, nerve degeneration, tumor formation), some of the chief difficulties in creating worthwhile models are discussed - extrapolation of data from the animal to the human organism, inherent resistance of
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USSR

CHERNYKH, A. M., Moscow, Patologicheskaya Fiziologiya i Eksperimental-
naya Terapiya, No 2, 1970, pp 9-16

animals differences between the spontaneous onset of a disease in
man and its start in an experimental animal.

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USSR

UDC 621.373.421.13:621.372.412

CHERNYKH, G. G., GORBADEY, YA. A.

"Problem of Circuit Oscillations of Quartz Resonators. Part I"

Translation: This article contains a description of a method permitting calculation of the frequencies and shapes of the natural oscillations of anisotropic (of monoclinic and higher symmetry) rectangular plates in a wide range of variation and geometric dimensions within the framework of two-dimensional theory. There are six illustrations, one table and a 21-entry bibliography.

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TITLE--HEAT TREATMENT OF THICK SHEET STEEL -U-

AUTHOR-(03)-ROSPASIYENKO, V.I., TSODIK, M.N., CHERNYKH, G.N.

COUNTRY OF INFO--USSR

SOURCE--METALLURG, FEB. 1970, (2), 40-43 (IN RUSSIAN)

DATE PUBLISHED-----FEB70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MATERIALS

TOPIC TAGS--STEEL SHEET, METAL HEAT TREATMENT, ECONOMICS, CARBON STEEL,
   ALLOY STEEL, MECHANICAL STRENGTH, TEMPERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0919   STEP NO--UR/0130/70/000/002/0040/0043

CIRC ACCESSION NO--AP0124580
                        UNCLASSIFIED

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPROVEMENTS IN THE TECHNOLOGY OF HEAT TREATING C AND ALLOY STEEL ARE DESCRIBED. THESE IMPROVEMENTS LARGELY RELATE TO THE CONSTRUCTION OF NEW CONTINUOUS FURNACES AND AUXILIARY HARDENING EQUIPMENT. SOME FUNDAMENTAL CHANGES IN TEMPERING TECHNIQUES HAVE GREATLY INCREASED THE EFFICIENCY OF THE WHOLE OPERATION. IN ADDITION TO ECONOMIC ADVANCES, THE UTS AND YS OF THE STEEL HAVE BEEN INCREASED BY 25PERCENT.

UNCLASSIFIED

USSR   UDC 621.373.531.2 (088.8)

CHERNYKH, I.V., IOTENKO, L.N.

"Blocking Oscillator"

USSR Author's Certificate No 307498, filed 16 Mar 70, published 13 Aug 71
(from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2G203P)

Translation: A transistorized blocking oscillator is proposed with a transformer
in the commutator. With the object of increasing the input resistance of the os-
cillator, it contains a diode-capacitance bridge in which the point in common of
the capacitors is connected with the first tap of the secondary winding of the
transformer, and the point in common of the transistors with the second tap of
the secondary winding of the transformer. The point in common of the first
transistor and the first capacitor is connected to the end of the secondary
winding of the transformer and to the first output terminal, and the point in
common of the second transistor and second capacitor to the second output termin-
al and to the base of the transistor.

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USSR

CHERNYKH, K. F.

"Symmetrical Functions of Symmetrical Tensors in the Anisotopic Theory of Elasticity"

Moscow, Mekhanika Tverdogo Tela, No 3, 1970, pp 5-14

Abstract: The article deals with a tensor of elastic moduli. For it, bases are constructed which possess a symmetry of the required form. For average syngonies corresponding to the proposed basis, matrices of elastic moduli are considerably more simple than the ones customarily used. On the other hand, the matrices of a cubic syngony and of an isotropic medium are diagonal anyhow. The tensor of elastic moduli is treated as an operator which distorts the form of the deformation tensor. A new, structural method of finding the intervals of possible change of the elements of a positive definite matrix is proposed. This method makes it possible, for all syngonies and textures, to represent the elements of the matrices of the moduli in a form which automatically satisfies Sylvester's conditions of the positive definiteness of a matrix. The advantages of the proposed approach in the consideration of theoretical problems of the mechanics of an elastic and anisotropic body are discussed.

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TITLE--EFFECT OF THE CHEMICAL NATURE OF COMPONENTS ON THE APPEARANCE OF
   SOLUBILITY ISOTHERM BRANCHES IN TERNARY AQUEOUS ELECTROLYTE SOLUTIONS

AUTHOR-(02)-LILICH, L.S., CHERNYKH, L.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 43-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AQUEOUS SOLUTION, SOLUBILITY, ELETROOLYTE, HYDROLYSIS,
   MOLECULAR STRUCTURE, ISOTHERM, SODIUM CHLORIDE, HYDROCHLORIC ACID,
   SODIUM NITRATE, LITHIUM CHLORIDE, ZINC CHLORIDE, CALCIUM SULFATE,
   CADMIUM COMPOUND, COPPER COMPOUND, PERCHLORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1906   STEP NO--UR/0153/70/013/001/0043/0048

CIRC ACCESSION NO--AT0114346
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0114346
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORM OF THE SOLY. ISOTHERM FOR
SALTS IN H SUB2 O AS A FUNCTION OF THE CONCN. OF A 2ND SALT IS ONE OF 4
TYPES: (1) THE SOLY. OF THE 1ST COMPONENT DECREASES WITH INCREASING
CONCN. OF THE 2ND COMPONENT; (2) THE SOLY. OF THE 1ST COMPONENT
INCREASES WITH INCREASING CONCN. OF THE 2ND COMPONENT; (3) THE CURVE OF
SOLY. OF THE 1ST COMPONENT GOES THROUGH A MAX. AS THE CONCN. OF THE 2ND
COMPONENT INCREASES; AND (4) THE CURVE SHOWS A MIN. AS THE CONCN. OF THE
2ND COMPONENT INCREASES. EXAMPLES OF (1) ARE: THE SOLY. OF NACLO SUB4
AS AFFECTED BY INCREASING CONCN. OF HCLO SUB4, CA(CLO SUB4) SUB2 CO(CLO
SUB4) SUB2, OR AL(CLO SUB4) SUB3, AND THE SOLY. OF NACL AS AFFECTED BY
INCREASING CONCN. OF NH SUB4 CL, KCL, LICL, OR HCL. EXAMPLES OF (2) ARE
THE EFFECT OF HCL ON THE SOLY. OF HGCL SUB2, OF HG(CLO SUB4) SUB2 ON THE
SOLY. OF HGCL SUB2, OF CSNO SUB3 ON THE SOLY. OF NANO SUB3, AND OF NH
SUB4 NO SUB3 ON THE SOLY. OF NH SUB4 NCS. THESE ARE ATTRIBUTED TO
COMPLEX FORMATION, HYDROLYSIS, OR MODIFICATION OF WATER STRUCTURE.
EXAMPLES OF (3) ARE THE EFFECT OF CSCL, NACL, LICL, OR MGCL SUB2 ON THE
SOLY. OF CASO SUB4 (HYDRATION EFFECTS). EXAMPLES OF (4) ARE THE EFFECTS
OF ZNCL SUB2 ON LICL SOLY., UO SUB2 (NO SUB3) SUB2 ON CSNO SUB3 SOLY.,
HNO SUB3 ON LINO SUB3 SOLY., AND H SUB2 SO SUB4 ON MGSO SUB4 SOLY., AND
EFFECTS OF HCLO SUB4 ON THE SOLY. OF PERCHLORATES OF CD PRIME2POSITIVE,
CA PRIME2POSITIVE, CU PRIME2POSITIVE, ZN PRIME2POSITIVE, MN
PRIME2POSITIVE, CO PRIME2POSITIVE, AND NI PRIME2POSITIVE.
FACILITY: LENINGRAD. GOS. UNIV. IM. ZHDANOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC   621.396.69:621.319.4

LAVROVA, N. N., KHOVANTSEVA, D. A., CHERNYKH, M. A., SHATALOV, A. Ya.

"Anodizing Aluminum Foil in Citrate Electrolytes"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1 (18), pp 35-41 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V349)

Translation: The authors give the results of a study of the principles governing formation of pure aluminum foil in citrate electrolytes. The rate of aluminum oxidation in aqueous solutions of citric acid is independent of the concentration of acid (0.03-2%) and the pH of the solution (3.5-6.0). An increase in electrolyte temperature reduces the rate of oxidation. The current efficiency at 20°C is 95%, and decreases to 85% at 90°C as a consequence of chemical dissolution of the film during oxidation. Citric acid of 0.2% concentration with the addition of ammonia (25%) to a pH value in the range of 4-6 can be recommended for anodizing aluminum at average voltages of up to 300 V and current densities of 5-10 mA/cm² (for smooth foil) and 20 mA/cm² (for etched foil). Bibliography of 8 titles. Ye. M.
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CHERNYKH   N.

ACC. Nr.: AP0050238

Ref. Code: US0000

PRIMARY SOURCE: FBIS, Daily Report, Soviet Union, 3 April 1970, Vol III,
No 65, p. d 3

USSR

BENNETT'S COMET OBSERVED, PHOTOGRAPHED AGAIN

Moscow TASS International Service in English 1907 GMT 2 Apr 70 L

[Text] Simferopol, April 2, TASS--Astrophysicists from the Crimean observatory
photographed tonight the brightest comet of the past 10 years.

Discovered late in December last year by the South African scientist John Bennett,
this comet with a yellow nucleus and a big tail is now in the northern hemisphere
and can be observed from Soviet territory.

"Photographic studies make it possible to trace in detail the comet's development,
the changes in its form, and composition", the TASS correspondent was told by Nikolai
Chernykh who supervised the studies. "Processes in the comet are connected with the
state of space, so comets can be viewed as a sort of probe in the near solar space".

Reel/Frame
19810162

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AP0050238

Scientists at the observatory are preparing bigger astronomical instruments to photograph the spectrum of the Bennett Comet. This will make it possible to define with greater accuracy its chemical composition and to study physical processes taking place in it. Photographs and spectra of the comet have also been made at an observatory situated in the northern spurs of the Tien Shan Mountains at an altitude of 1,500 metres above sea level (Kazakhstan).

The comet was photographed in ultraviolet and infrared rays. A preliminary analysis of these pectures showed that theycan help in tracing the distribution of matter ejected by "solar wind" from the comet's head.

The comet was also observed from a new Soviet high-altitude observatory that is being built in the Tien Shan mountains at an altitude of more than 3,000 metres above sea level. The polarisation of light in its head was recorded at the observatory.

19810163

USSR   UDC 632.95:633.426

KARAVYANSKIY, N. S., and CHERNYKH, N. M., All-Union Scientific Research
Institute of Feeds imeni V. R. Vil'yams

"Application of Granulated Insecticides for the Protection of Fodder Root
Crops From Pests"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 5, 1972, pp 38-39

Abstract: Leaf damage from various types of fleas was measured as 45-66%
of the root crop weight; damage increases at low levels of soil moisture.
Following limitations on use of DDT and hexachlorocyclohexane, new insecti-
cides which left little or no harmful residue were sought. Rogor and anthio,
both in 40% starch equivalent concentrations, were mixed with superphosphates,
then with various turnip seeds and immediately planted. Production tests
were conducted in Khar'kovskaya and Moscow Oblasts, in the Georgian SSR and
the Komi ASSR, and repeated 4 times. The treated plots remained practically
untouched while the control suffered 100% plant damage. Twenty days after
planting there were 2-40% more sprouts on the treated plots. In 1968-1969
the treated crops were 12-13% greater than the control, and in 1970, 40-51%
greater. Residue was insignificant by the 4 leaf stage of growth, and by
the 6 leaf stage no residue at all was observed. None of the insecticide
was found in either the root crops or the soil.
1/1

USSR   UDC 615.216.5:547.629.2

APENDARUK, A. P., SKOLDIKOV, A. P., KHARKEVICH, D. A., and CHERNYKH, N. A.,
Scientific Research Institute of Pharmacology, Academy of Medical Sciences USSR,
Moscow

"Studies in the Cyclobutanedicarboxylic Acid Series. VII. Synthesis and
Curareform Activity of Bioquaternary Salts of Alkamine Esters of p,p'-Substi-
tuted α-Truxillic Acids"

Abstract: The article describes the synthesis and testing (in the form of
dimethiodides) of analogs of anatruxonium containing in the phenyl nuclei sub-
stituents differing in their electronic nature, viz. p,p'-dinitro, p,p'-dimethoxy
and p,p'-dihydroxy groups. Pharmacological tests of the resultant compounds
showed that they all possess pronounced curareform activity. The most effective
curareform agent is anatruxonium. Replacement by the nitro, methoxy or dioxy
group reduces the myoparalytic activity.

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USSR   UDC 621.373.001:621.372.412(088.8)

CHERNYKH, N. I.

"Oscillatory Circuit for Superhigh Frequency Generators"

USSR Author's Certificate No 254579, Filed 19 Jun 68, Published 9 Mar 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D306P)

Translation: This author's certificate introduces an oscillatory system
for superhigh frequency generators executed from a coaxial quarter-wave
resonator. In order to improve the Q-factor and insure optimal matching
of the oscillatory system with several loads on the generatrix of the
resonator surface, coaxial segments connecting the mentioned oscillatory
system to the loads are fastened at the antinodes of the electromagnetic
field, and the decoupling element is connected to the central strand of
each coupling segment.

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USSR

YAKOVLEV, G. M., CHERNYKH, N. L., and PETRAKOVSKAYA, Ye. A., Tomsk Medical
Institute

"On the Question of Registering Changes in Blood Quantity and the Possibility
of Determining Overall Blood Volume in an Organism by Means of Measuring
Electrical Resistance of the Human Body"

Abstract: Experiments were conducted in an effort to correct and refine
claims made by other investigators that blood loss from a region and the
entire volume of blood in circulation can be calculated from a recorded
change in the electrical resistance of tissue. The present authors, dis-
covering an error in previous mathematical formulas, showed that calculation
of the entire volume of blood in circulation was no longer possible on the
basis of existing theories. Then, using corrected equations and comparing
those values with results from empirical studies, the authors found that
change in electrical resistance was an accurate gauge of blood loss from
regions of limited extent. However, because the measured value of electri-
cal resistance in tissue was not uniform throughout the body, the present
method for determining blood loss in the whole organism was unsatisfactory.
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USSR   UDC 542.48

BAYSBLAT, M. B., GOLUB, S. I., and CHERNYKH, N. YE., Sverdlovsk

"Calculation of Specific Heat-Exchange Surface in Multi-Stage
Evaporating-Distilling Installations"

Abstract: Specific heat-exchange surface in apparatus and heaters
(surface per 1 kg/hr of evaporated water) is one of the principal
technical-economic indices of evaporating installations, but calcu-
lation of the theoretically correct value of this index is extremely
cumbersome.

     The authors derive simplified formulas which do not take into
account the less important factors affecting specific heat-exchange
surface. Test calculations made with these formulas yield results
within 4 percent of the theoretical values.

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USSR

UDC 576.895.42.01(471.62

VOLKOV, V. I., and CHERNYKH, P. A., Khabarovsk Kray Sanitary Epidemiological Station and Khabarovsk Antiplague Station

"Species Composition and Distribution of Ixodid Ticks in Khabarovsk Kray"

Abstract: Khabarovsk Kray (Far Eastern USSR) is heterogeneous in relief, soils, climate, flora and fauna, with over 50% of the total area covered by coniferous-deciduous and coniferous (taiga) forests. Field trips from 1962 to 1969 in 19 to the 20 administrative regions of the kray revealed the existence of 10 species of ixodid ticks: I. persulcatus, Haemaphysalis concinna, H. japonica douglasi, Dermacentor silvarum, D. asiaticum, I. pavlovskiy, I. redicorzevi, I. signatus, I. angustus, and I. maslovi. All 10 species are found in the southern and central regions in the zone of the coniferous-deciduous forests. Five species - I. persulcatus, H. concinna, D. silvarum, I. angustus, and I. redicorzevi - were found further north in the zone of the coniferous forests. The mass species - I. perculcatus, H. concinna, J. japonica, and D. silvarum - are the vectors and reservoirs of tickborne encephalitis virus. Six main ecological and faunistic complexes of ticks are distinguished and described; I. persulcatus
1/2

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BUSOYEDOVA, N. M., ANTIP'YEVA, O. A., LIPAYEV, V. M., KOZLOVSKAYA, O. L., CHERNYKH, P. A., FEOKISTOV, A. Z., GRIGOROV, V. I., CHIPANIN, V. L., and KHAMAGANOV, S. A., Khabarovsk Antiplague Station

"Characteristics of Natural Foci of Tularemia in Khabarovskiy Kray"

Abstract: A study conducted in the southern part of Khabarovskiy Kray indicated that natural foci of tularemia in forested and agricultural areas are different from those found in other parts of the USSR, because Arvicola terrestris and the common vole (Microtus arvalis) are absent, and hares and house mice are not numerous. Muskrats were found at only one focus. In forested regions the principal host is the large-toothed redbacked vole (Clethrionomys rufocanus), while the long-time reservoir and vectors are I. persulcatus and H. concinna ticks. Forest and field mice and the Siberian chipmunk were also infected. In agricultural regions the hosts are the northern redbacked and Far-Eastern vole (Clethrionomys rutilis; Microtus fortis), while D. silvarum and H. concinna ticks constitute the reservoir and vectors. A low epizootic level and still lower epidemic activity were typical for

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tularemia foci in Khabarovskiy Kray in the vicinity of the Amur River. The
low rate of infection of human beings was due to the absence or small numbers
of classical hosts (Arvicola terrestris, common vole, and hares) with which
human beings may come into contact, the absence of active and widespread
epizootics, and the predominance in agricultural areas of a rodent of the
secondary host group (field mouse). Of seven cases of tularemia recorded,
five were of the bubonic form. In one instance the source of infection was
water containing P. tularensis, and in another instance the infection was
apparently due to introduction of the agent into an eye by hands soiled with
rodent feces. Testing of the population at known tularemia foci with tularin
resulted in a positive allergic reaction in 1.2-2.5% of cases. The agglu-
tination reaction was positive in 2.5-5.8%, and the passive hemagglutination
reaction in 3.3-9.7% of cases. The data reported were obtained in an investi-
gation conducted during 1956-1968.

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USSR   UDC 911.3:616.9:576.89(571.62)

CHERNYKH, P. A.

"Adaptation of Rodent Gamasid Ticks to Hosts and Landscapes of the Amur Shore Area"

Translation: The heterogenous fauna of the Amur area Gamasid ticks consist of eight mass species: Haemolaelaps glasgowi, Eulaelaps stabularis, Laelaps clethrionomydis, L. pavlovskyi, Myonyssus dubinin, Haemagamasus serdju Kovae, H. ambulans, and Hir isabellinus. Tick hosts are the widely distributed animals dwelling in native biotopes. Among the mass Gamasid species are species adapted to individual rodent species and one particular landscape (L. clethrionomydis). Others can be parasites on a wide variety of hosts found over an extensive area (Hg. ambulans).

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UDC 576.895.42.095.38:599.323.4/01+591.69-542.932.34/
(571.62)

CHERNYKH, P. A., and VOLKOV, V. I., Antiplague Station and Regional Sanitary
Epidemiological Station, Khabarovsk

"Fauna and Distribution of Gamasid Mites of Murine Rodents in the Khabarovsk
Region"

Abstract: Data were gathered from 1959 to 1966. Rodents and their parasites
were collected in natural surroundings as well as in residential premises
all year round. A total of 618,000 traps were set per day, 45,766 rodents
and 64 burrows were examined, and 55,5000 Gamasid mites belonging to 39 tax-
onomic classes in 9 families were collected. The material collected was
evaluated in the usual manner. Eleven forms of rodents occur in the Khaba-
rovsk region, which is mountainous and 53% covered with forests. Eight species
were found to be predominant and constituted 91.6% of all collections. All
mite species were found in the southern part of the region, whereas only 16
species were found in the northern part. This uneven distribution of mites
was attributed to climatic factors and the distribution of hosts. The associa-
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CHERNYKH, P. A., and VOLKOV, V. I., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 271-275

tion of various Gamasid species with different territories could be shown. Most of the Gamasid species were found to belong to boreal zoogeographic complexes.

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1/2   020
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--ELECTRON MICROSCOPIC DATA ON THE STRUCTURE OF FILMS FROM MIXTURES OF LATICES -U-

AUTHOR-(03)-VERKHOLANTSEV, V.V., CHERNYKH, V.D., MANUYLOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZNURNAL, 1970, VOL 32, NR 3, PP 347-349

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON MICROSCOPY, LATEX, PLASTIC FILM, POLYSTYRENE RESIN, POLYVINYL CHLORIDE, BYUTADIENE STYRENE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1598   STEP NO--UR/0069/70/032/003/0347/0349

CIRC ACCESSION NO--AP0125220
UNCLASSIFIED

CIRC ACCESSICN NO--AP0125220
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF FILMS FORMED UPON
  DRYING OF DILUTED BINARY MIXTURES OF POLYVINYL CHLORIDE, STYRENE AND
  BUTADIENE STYRENE COPOLYMER LATICES HAS BEEN STUDIED BY ELECTRON
  MICROSCOPY.   FACILITY: LENINGRADSKIY TEKHNOLOGICHESKIY INSTITUT.

UNCLASSIFIED

USSR   UDC 621.316.825.4:678.762

PAUSHKIN, YA. M., PANCHENKOV, G. M., CHERNYKH, V. G., LUNIN, A. F.,
KAUSHANSKIY, D. A., DMITRIYEV, V. A., and MARKOVICH, V. B., Moscow
Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin,
Moscow, Ministry of Higher Education USSR

"Effect During the Process of Irradiation of Ionizing Radiation on
Polymers With Conjugated Bonds"

Abstract: The effects of gamma-rays from ^{60}Co at a dosage rate of
1.2-1.3 Mrad/hr on the electrophysical properties of the organic
semiconductors polyacetonitrile (I), paracyanogen (II), polyphenyl-
cyanamide (III), polydiacetyl (IV), polybutylcyanamide (V), and
polybutylcyanate (VI), specifically on their electrical resistance,
were studied during the process of irradiation. For I, II, IV, and
VI with a low ohmic resistance that were prepared at 450-500°,
irradiation at doses $\leq$ 5 X 10^9 rad did not result in any changes
of resistance. Irradiation of V, which also had a low ohmic resist-
ance, produced a slow rise in resistance in the dose range of 0-110

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Mrad and an abrupt rise at 110-140 Mrad. In the case of VI with a high ohmic resistance, which was prepared at 350°, ionizing radiation in the dose range from 0 to 170-200 Mrad produced further polymerization and cross-linking, which were reflected in a decrease of the resistance, while doses $>$ 200 Mrad decomposed the polymer. The results showed that irradiation at doses up to 5×10^9 rad of I, II, IV, and VI with a low ohmic resistance did not change the physico-chemical and electrophysical properties of these polymers — i.e., they are suitable for use in radioelectronic devices operating under conditions of exposure to ionizing radiation.

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1/2   007
UNCLASSIFIED
TITLE--AMIDES AND HYDRAZIDES OF OXALIC ACID. XVII. CONDENSATION OF
ARENESULFAMIDES WITH ARYLAMINOETHYLOXAMIC ACID ESTERS -U-

PROCESSING DATE--20NOV70

AUTHOR-(03)-PETYUNIN, P.A., CHERNYKH, V.P., BANNYY, I.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1015-19.

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CONDENSATION REACTION, OXALIC ACID, AZIDE, ESTER, AMIDE,
ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1354   STEP NO--UR/0366/70/006/005/1015/1019

CIRC ACCESSION NO--AP0135028
UNCLASSIFIED

2/2   GC7   UNCLASSIFIED   PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0135028
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF (CO SUB2 ET) SUB2
WITH RC SUB6 H SUB4 NHCH SUB2 CH SUB2 NH SUB2 GAVE RC SUB6 H SUB4 NH(CH
SUB2) SUB2 NHCOCO SUB2 ET (I) (R IS H, 4 ME, OR 3 ME). THE REACTION OF
I WITH R PRIME1 COCL (R PRIME1 IS PH, ME, OR CH SUB2 CL) GAVE RC SUB6 H
SUB4 N(COR PRIME1)(CH SUB2) SUB2NEGATIVE NHCOCO SUB2 ET (II). TREATMENT
OF II WITH MECNA AND R PRIME2 C SUB6 H SUB4 SO SUB2 NH SUB2 GAVE RC SUB6
H SUB4 N(COR PRIME1) (CH SUB2) SUB2 NHCOCONHSO SUB2NEGATIVE C SUB6 H
SUB4 R PRIME2 (III) R PRIME2 IS H, 4 ME, R CL, OR 4 NH SUB2). III WAS
ALSO PREPD. BY TREATING I WITH R PRIME2 C SUB6 H SUB4 SO SUB2 NHNA TO
OBTAIN RC SUB6 H SUB4 NH SUB2 NEGATIVE (CH SUB2) SUB2 NHCOCONHSO SUB2 C
SUB6 H SUB4 R PRIME2, WHICH WAS THEN TREATED WITH R PRIME1 COCL.
FACILITY: KHAR'KOV. FARM. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

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UDC 772.99:535

BELOZEROV, A. F., CHERNYKH, V. T.

"The Use of Holograms With an Optical Image of the Object for Recording Inhomogeneities on a Zender-Mach Interferrometer"

Abstract: Holograms with an optical image of a body were obtained on a Zender-Mach interferrometer. Coupling of the work zone of the inhomogeneity under investigation was effected by means of two optical systems installed in the receiving part of the interferrometer. Simultaneously with formation of the image of the body in the plane of the holomgram, each of the optical systems created a signal pencil of rays and a reference pencil of rays. In the first variant of the circuit the reference pencil of rays passed through the peripheral part of the objective, yielding an optical image of the body. In the second variant, the reference pencil was directed into the plane of the hologram by means of flat mirrors, bypassing the objective which couples the work zone with the plane of the hologram. Selection of the appropriate optical elements permitted the dimensions of the hologram to be decreased substantially in comparison

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USSR

BELOZEROV, A. F., CHERNYKH, V. T., Zhurnal Nauchnoy i Prikladnoy Fotografii i
Kinematografii, Vol 15, No 4, 1970, pp 281-283

with the dimensions of the work field of the interferrometer. The use of focus-
ing optics permitted sharp contours of the body of the restored image to be
obtained in reconstruction of the hologram. This permits error to be reduced in
quantitative evaluation of the inhomogeneity. The necessity of using a focusing
optical system in the investigation of transparent inhomogeneity is indicated.

2/2

STRUMINSKIY, V. V., KHARITONOV, A. M., CHERNYKH, V. V., Novosibirsk

"Experimental Study of the Transition of a Laminar Boundary Layer of a
Turbulent Boundary Layer at Supersonic Velocities"

Abstract: Experiments on the effect of the unit Reynolds number on the
transition of a laminar boundary layer into a turbulent boundary layer
under supersonic flow of a plane plate in wind tunnels with different
dimensions of the working elements are described. It is noted that experi-
mental data in the literature present a fairly clear picture of the effect
of the unit Reynolds number (U/ν, where U is the velocity and ν is the
coefficient of kinematic viscosity) on the transition to the boundary layer,
but that the results of these studies were conducted over a relatively
narrow range of unit Reynolds numbers (up to $23 \cdot 10^6$ m^{-1}) and it was there-
fore of interest to study the effect of the unit Reynolds number on the
transition in a wider range of U/ν. New results were obtained on the
transition of the laminar boundary layer into a turbulent boundary layer
on a plane plate at $M = 3$ and 4 over a wide range of variation in unit

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USSR

STRUMINSKIY, V. V., et al, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72,
pp 30-34

Reynolds numbers $(10-74) \cdot 10^6$ m^{-1}. A stabilization effect which appears
earlier in wind tunnels with greater dimensions of the working element
was observed for large values of the unit Reynolds number. The position
of the transition region in different wind tunnels was fairly well defined
by the number Re_D for small values of the unit Reynolds number, where
$Re_D = UD/\nu$ and D is the dimension of the working element of the wind tunnel.
Data from experiments with five different wind tunnels are presented.

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USSR

UDC 553.607.11+533.607.14

LEBIGA, V. A., CHERNYKH, V. V.

"Study of the Effect of Grids on the Turbulent Flow Characteristics"

Abstract: A study was made of the effect of the drag of a grid and the number of successively installed grids on the reduction in intensity of the turbulent velocity pulsations in the T-325 wind tunnel. Some results are presented for measuring the structure of the turbulence generated by the grid itself. When calculating the extinguishing effect of grids on the turbulent velocity pulsations it is necessary to consider the turbulence generated by the last grid (the grid turbulence). The magnitude of this turbulence depends on the Reynolds number calculated by the grid wire diameter. If a sufficiently large number of grids are installed in the forechamber of the wind tunnel only the grid turbulence is present. Thus, in the forechamber of the wind tunnel the low turbulence level is determined by the magnitude of the turbulence generated by the last grid. Accordingly, further increase in the number of grids is inexpedient when the transmitted turbulence becomes sufficiently low by comparison with the turbulence generated by the last grid ($< \sim 0.5 \, \varepsilon_c$). The grid turbulence becomes in practice isotropic when $x/H \geq 400$ (x is the distance from

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USSR

LEBIGA, V. A., et al., Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk, No 8 (203), vyp. 2, Jun 1972, pp 47-53

the grid). This permits calculation of some of the turbulence characteristics by the theoretical formulas for isotropic turbulence.

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USSR

UDC 669.71.046.44

LAGUNOV, YU. V., GLADKIKH, V. A., PETRUNOV, V. S., RUDENKO, V. K., VOYTANIK, S. T., KLIMKOVICH, N. S., PORADA, A. N., and CHERNYSH, F. I.

"Investigation of the Kaolin Sintering Process"

Translation: The authors work out the parameters of the sintering process for kaolins of the Glukhovetskoye, Prosyanaya, and Novoseletskoye deposits in a laboratory sintering cup of square section with a sintering area of 0.1 m^2 and with an exhauster having an efficiency of 0.5 m^3/sec. Fe concentrate was used as an additive to lower the melting point of the sintering charge. The hygroscopic moisture content of both primary and secondary kaolins intended for sintering should range from 13 to 18%. The sintering of both primary and secondary kaolins is shown to be possible in principle. 5 tables.

1/1

USSR   UDC 669.71.053.24(088.8)

KHITRIK, S. I., GASIK, M. I., VUKOLOV, YE. A., KLIMKOVICH, N. A.,
PORADA, A. N., LAGUNOV, YU. V., POLONSKIY, S. M., IORDANOVA,
Z. A., MALYSHEV, V. I., YEMLIN, B. I., KASHKUL', V. V., MASHKOV,
V. P. TSEYMAKH, N. L., YEM, A. P., CHERNYSH, F. I., and KOLNOGU-
ZENKO, V. A., Dnepropetrovsk Metallurgical Institute

"Method of Smelting Abrasive Electrolytically Produced Corundum"

Translation: A method is proposed for smelting abrasive elec-
trolytically produced corundum in a thermal furnace which involves
deep fusion of alumina-containing charge with reducing agents.
To increase the abrasive properties of corundum and to obtain
in it a Ti oxide content of $< 1\%$, smelting is carried out on
kaolin presintered with Fe-ore additive or scale in the amount
of 20-30 wt % of the charge.

1/1

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1/2   007   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--POLYAMMONIATES OF GALLIUM HALIDES -U-

AUTHOR-(02)-LYUTAYA, M.D., CHERNYSH, I.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,371
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GALLIUM CHLORIDE, BROMIDE, AMMONIUM COMPOUND, AMMONIUM HALIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1445   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126976
                       UNCLASSIFIED

2/2   007   UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0126976
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYAMMONIATES OF GA HALIDES, E.G.
  GACL SUB3 AND GABR SUB3, ARE PREPD. BY TREATING METALLIC GA WITH THE
  CORRESPONDING NH SUB4 HALIDE.   FACILITY: INSTITUT PROBLEM
  MATERIALOVEDENIYA AN UKRAINSKOY SSR.

UNCLASSIFIED

USSR

NEPOKLONOV, A. A., KRYKIN, A. S., and CHERNYSH, N. I.

"All-Union Conference on the Control of Bloodsucking Flies, Ticks, and Gad-
flies of Farm Animals"

Moscow, Veterinariya, No 10, 1971, pp 120-122

Abstract: The title conference was held in June 1971 in the city of Novomo-
skovsk (Tulskaya Oblast). The 70 papers and reports discussed methods of
protecting farm animals against bloodsucking flies and ticks (R. M. Alekhin,
USSR Ministry of Agriculture); summary of research conducted from 1966 to
1970 on the control of insect and tick parasites (Yu. I. Boykov, All-Union
Scientific Research Institute of Veterinary Sanitation); main directions of
efforts to control gadflies of cattle and reindeer (A. A. Nepoklonov, All-Union
Scientific Research Institute of Veterinary Sanitation); principles and methods
used in toxicological evaluation of pesticides (G. A. Talabov, ARIVS); outlook
for the development of biological methods to control bloodsucking mosquitoes
(P. A. Lavrent'yev, Kazan' Veterinary Institute); ecology of reindeer gadflies
and control measures (P. I. Bryushinin, Izhmo-Pechora Veterinary Research
Station); use of thermostable exotoxin and entobacterin against insects (A. P.
1/2

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USSR

NEPOKLONOV, A. A., et al., Veterinariya, No 10, 1971, pp 120-122

Tonkonozhenko, ARIVS); toxic properties of new insecticides (A. S. Selivanova, Kazan' Veterinary Institute); physiocochemical methods of analyzing pesticide residues in biological substrates (G. A. Talanov, ARIVS); and histological, histochemical, and electron-microscope studies of reindeer organs and tissues after exposure to baitex (P. M. Makhno).

2/2

USSR   UDC 619:616.988.43

CHERNYSH, N. I., DARDA, P. N., and ANTONYUK, V. P.

Moscow, "Kolos" Chto Nuzhno Znat' o Yashchure (What You Should Know About
Foot-and-Month Diseases), 1970, 56 pp

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USSR

CHERNYSH, N. I., Moscow, "Kolos", What You Should Know About Foot-and-Mouth
Diseases, 1970, 56 pp

Excerpt: The Stability of Foot-and-Mouth Disease Virus - Foot-and-mouth
disease virus is resistant to environmental factors as well as to a variety
of physical and chemical agents. Its stability is largely a function of the
environment in which it happens to be.

Low temperature preserves the virus rather than destroying it. Many
investigators have found that the virus remains active more than a year
in frozen meat from animals that had to be slaughtered and in frozen manure.
It survives more than 6 months on pastures during the fall and winter. On
high-altitude pastures in the Tadzhik SSR where sick sheep grazed during the
fall, the virus was found to retain its activity until the following May. As
a result animals that came to graze there contracted the disease.

Even when dry the virus can survive a long time: more than 6 months in a
haystack, about 140 days in bran, about 3 months in straw, $1\frac{1}{2}$ months in dry
grain chaff, and about 145 days on wool.

Virus adapted to baby rabbits remains active in dry form at 2 to 4°C for
420 days and at 22 to 32°C for 150 days. In salted meat kept at 1°C, foot-
and-mouth disease virus was found in the lymph nodes after 124 days and on
the hide after $1\frac{1}{2}$ months. It can survive about 12 days in chilled milk and
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USSR

CHERNYSH, N. I., Moscow, "Kolos," What You Should Know About Foot-and-Mouth Diseases, 1970, 56 pp

about 45 days in refrigerated butter prepared from fresh cream, about 39 days (and in the fall over 100 days) in liquid manure and in stagnant water in barnyards, slaughterhouses, and meat-packing plants. It can also survive a long time on the clothing and shoes of milkmaids, cowherds and other persons tending sick cattle, on articles used in the care of cattle, and in the bedding material used in a foot-and-mouth disease focus.

    A high temperature quickly kills the virus. Five minutes' boiling or 30 minutes' heating of infected milk and dairy products at 85°C safely disinfects them. The virus soon dies in a 1 to 2% hot alkali or formaldehye solution.

3/3

Chernysh, T. G.

JPRS 59 499
14 July 7-

RELIABILITY OF ARTERIAL PRESSURE MEASUREMENTS MADE BY
PERSONS NOT HAVING A MEDICAL EDUCATION

Investigations were made for the purpose of developing
a method for teaching the measurement of arterial pressure
(AP) to individuals not having a medical education and for
evaluating the reliability of the data which they collect.

Seven males in the age group from 25 to 35 years were
taught to measure AP by the Korotkov method. Teaching involv-
ed familiarization of the trainees with the earlier formulated
instructions on measuring AP and conducting three exercises
with them. During the exercises, each of which lasted not
more than 30-40 minutes, the physician in the presence of the
subjects measured arterial pressure with a sphygmomanometer,
pointing out to the subjects the correct application of the
cuff, determining the site for placement, and the use of the
phonendoscope. Particular attention was given to the time
for determining pressure: It was recommended that the appear-
ance of sounds at the time of decompression be regarded as
the maximum AP and that the time of disappearance of sound be regard-
ed as minimum AP.

An evaluation of the accuracy of AP measurement by the
trainees was made during the 20-30 days following training,
during which the subjects each day in the morning and evening
independently measured the AP. The measurement was made al-
ternately on both arms three times at two-minute intervals.
In addition to the trainee, pressure was determined by a phys-
ician and nurse. For these purposes we desired a special
phonendoscope, making it possible to listen to the Korotkov
tones by three persons simultaneously. In addition, for

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1/2   009

UNCLASSIFIED

TITLE--EFFECT OF OLEIC ACID ON YEASTS -U-

PROCESSING DATE--20NOV70

AUTHOR-(04)-ROZMANOVA, N.V., PALAGINA, N.K., CHERNYSH, V.G., STAFEYEVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(3), 303-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OLEIC ACID, YEAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0118

STEP NO--UR/0411/70/006/003/0303/0306

CIRC ACCESSION NO--AP0135615

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0135615   PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OLEIC ACID ADDED AT 20 KG-TON OR MORE TO BAKERS' YEAST GROWN IN MOLASSES MINERAL MEDIUM SOMEWHAT INCREASED THE YIELD OF BIOMASS AND SIGNIFICANTLY ACCELERATED PROTEOLYSIS DURING STORAGE OF YEAST. IT IS NOT CLEAR WHETHER THIS IS DUE TO DIRECT ACCELERATION OF PROTEOLYSIS BY THE HIGH OLEIC ACID CONCNS. OR TO THE TOXIC ACTION OF OLEIC ACID OXIDES.   FACILITY: LENINGRAD RES. INST. FOOD IND., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 621.376.332(088.8)

CHERNYSH, V. I.

"A Frequency Discriminator"

USSR Author's Certificate No 261478, filed 4 Oct 68, published 28 May 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D57 P)

Translation: This Author's Certificate introduces a discriminator for
binary FM signals. The unit contains two selective circuits, amplitude
detectors, semiconductor blocking diodes and two transistors at the output.
To reduce signal power losses in the output circuits of the discriminator,
the amplitude detector load resistors, between which an additional resistor
is connected, are tied to the bases of the output transistors through the
emitter-collector junctions of the matching transistors with conductivity
type opposite to that of the output transistors. The bases of the auxiliary
transistors and load capacitors of the amplitude detectors are cross con-
nected to the ends of the additional resistor.

1/1

USSR   UDC 621.376.322

CHERNYSH, V.I.

"A Frequency Discriminator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 5, 1970, pp 43-44, patent No 261478, filed 4 Oct 68

Abstract: This Author's Certificate introduces a frequency discriminator for
frequency modulated binary signals. The unit contains two selection circuits,
amplitude detectors, blocking diodes and two transistors at the output. As
a distinguishing feature of the patent, signal power losses in the output cir-
cuits of the discriminator are reduced by connecting an additional resistor
between the load resistors of the amplitude detectors, and connecting these
load resistors to the bases of the output transistors through the emitter-
collector junctions of the matching transistors whose conductivity type is
opposite to that of the output transistors. The bases of the auxiliary tran-
sistors and the capacitors of the amplitude detector load are cross connected
to the ends of the auxiliary resistor.

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USSR

UDC 621.791.754.011:669.715

CHERNYSH, V. P., SYROVATKA, V. V., Kiev Polytechnic · Institute, GRITSENKO, A. F., RZHANOV, B. P., Dnepropetrovsk

"Structure and Properties of Seam Metal in AMg6 Alloy Welded with Electro-magnetic Mixing"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 16-19.

Abstract: An aluminum alloy was welded by argon-arc welding using a tungsten electrode at a rate of 10 m/hr. Mixing was achieved by an axial discrete magnetic field by a coil attached to the welder. Electromagnetic mixing of the welding bath was found to produce a finer primary structure and complete suppression of zones of columnar crystals. The increased fineness of the structure was accompanied by an increase in total length of crystal boundaries by more than a factor of 3. The orientation of the structure was decreased from 28% to 21%. The mobile state of the arc during mixing helps to intensify removal of the oxide film from the bath, decreasing the porosity of the welded seams. The use of the electromagnetic mixing method helps to increase the yield of defect-free joints by more than 4 times. Induction of the controlled magnetic field has a decisive influence on the results of mixing. The reversing frequency influences primarily the surface relief of the seam. 1/1

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Welding

USSR

UDC 621.791.053.01:669.017.3:669.295

KUZNETSOV, V. D., MALINKIN, I. V. (Engineers), CHERNYSH, V. P. (Cand. of Techn. Sciences), and MAZOK, V. K. (Engineer)

"Effect of Electromagnetic Stirring of the Weldpool on Both the Structure and Properties of Weld Joints on VT6S Alloy"

Moscow, Svarochnoye proizvodstvo, No 5, May 72, pp 8-10

Abstract: It is shown that electromagnetic stirring (EMS) of the weldpool in welding titanium alloys provides higher plastic properties of the weld metal while maintaining its strength properties through thinning and de-creasing the linear structural dimensions of the α-phase, and reducing the intergranular inhomogeneity. A comparative microstructural analysis shows a marked distinction in both the shape and type of α-phase segre-gations. The structure of the α-phase in welds done without the use of EMS is characterized by the presence of roughly lamellar elongated colonies intersecting in some areas the boundaries of the parent grain. In welding with ESM, the α-phase has a slightly elongated fine-needle shape with dispersion decay signs typical of fine-grained metal. (3 illustrations, 2 tables, 2 bibliographic references)

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CIRC ACCESSION NO--AP0123261   UNCLASSIFIED   PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   A METHOD OF ELECTROMAGNETIC
AGITATION OF THE WELDING BATH, AND A DEVICE TO REALIZE IT, TO BE USED IN
A MAGNETIC CONTROL OF THE PROCESS OF CRYSTALLIZATION OF THE SEAM METAL,
ARE EXAMINED.

UNCLASSIFIED

CHERNYSH, V. P., Candidate of Technical Sciences, Kiev, Polytechnic Institute

"Principle of Designing Control Equipment for the Electromagnetic Mixing of a Welding Bath"

Abstract: The article describes a method for the electromagnetic mixing of a welding bath and the equipment used for controlling the crystallization process in the weld metal. An external pulsating magnetic field, reversible with respect to the welding current, is superimposed on the welding bath. The magnetic field reversal is achieved by dividing the pulses into groups corresponding to the required reversal frequency and feeding them alternately into a solenoid winding in opposite directions. The apparatus for the realization of various conditions of electromagnetic mixing is constructed according to a circuit diagram based on a thyristor interruptor and a two-channel time regulator. Orig. art. has: 4 figures.

1/1

USSR

UDC 539.234

KORNEYEV, I.A., TYUN'KIN, YU.N., CHERNYSHCHEV, E.A.

"Device For Ion Deposition Of A Film"

USSR Author's Certificate No 297709, filed 24 Sept 69, published 18 May 71
(from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A446P)

Translation: A device is proposed for ion deposition of a film on a substrate.
The anode, which simultaneously also serves as a screen, is made in the form of
a hollow body of revolution with a curvilinear generatrix, with which, in the
direction of the end with the smaller diameter, a cathode is located, partially
entering into this hollow body, and in the direction of the end with the larger
diameter a substrate holder is located.

1/1

USSR

UDC: 621.396.6.017.7

OKSMAN, A. L., MAKSIMOV, Yu. B., CHERNYSHENKO, A. A.

"An Algorithm for Correcting the Arrangement of Radio Electronic Elements in a Device to Optimize Thermal Conditions"

Translation: The authors discuss construction of a purpose function for finding the optimum arrangement of the elements in electronic radio equipment on an instrument panel based on heat conditions. The gradient method is used to minimize the resultant purpose function (overall estimate of overheating of the circuit.) A computer check of the proposed algorithm showed satis- factory results. The algorithm for correcting the arrangement of the ele- ments in the device may be one of the elements in the solution of the complex problem of constructing electronic modules. Three illustrations, bibliog- raphy of five titles. Resumé.

1/1

USSR

UDC 539.374

CHERNYSHENKO, I. S., SHARSHUKOV, G. K., Kiev, Moscow

"Stressed State of a Spherical Shell with a Hole in the Case of Recurrent Static Elastic-Plastic Deformation"

Kiev, Prikladnaya Mekhanika, Vol IX, No 10, 1973, pp 12-17

Abstract: A theoretical-experimental study was made of the stress-strained state of a spherical shell with a round unreinforced hole in the elastic-plastic stage under recurrent static load. The theoretical solution was obtained on the basis of deformation theory of plasticity under variable loads, and the numerical values of the stresses and strains were found for shells made of AMg6M, V92Ts and D20 alloys taking into account the formation of secondary plastic flows in the process of stress relief. A study was made of the variation of the stresses and strains with an increase in the number of loading cycles. The results of the theoretical calculations are compared with the experimental data indicating a difference of no more than 5.8 percent.
The experimental studies show that the stabilization of the stressed state comes very quickly. After the seventh or eighth loading cycle the stresses remain constant and do not change from cycle to cycle. In shells with a hole in the presence of repeated lows the residual stresses and strains must be determined considering the physical nonlinearity during stress relief.
1/1

USSR

CHERNYSHENKO, I. S., (Kiev), Institute of Mechanics, Academy of Sciences, Ukrainian SSR

UDC 539.374

"Stress Distribution in Spherical Shells with a Cylindrical Connecting Pipe Beyond the Elasticity Limit"

Abstract: The article considers elastoplastic equilibrium structures, consisting of a spherical shell, a toroidal shell, and a cylindrical shell, that are under the influence of a uniformly distributed internal pressure. An investigation is made of the stress-strain state of a structure made of a homogeneous-istropic reinforced material, with account taken of the elastoplastic deformations originating in the zone of stress concentrations. The numerical solution of the nonlinear resolving equations in terms of permutations obtained on the basis of the theory of thin shells of revolution and the deformation theory of plasticity, is conducted by the method of elasticity solutions by means of a digital electronic computer. Conditions are presented concerning the coupling of the shells, written in finite-difference form, as well as the boundary conditions of the problem under consideration. Consideration is given to a numerical example for a structure with specific initial paramters, and an analysis is given of its work with a given value of the load, with account taken of elastic and elastoplastic deformations, 2 figures, 1 table, 6 references.

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USSR

UDC 539.374

CHERNYSHENKO, I. S. (Institute of Mechanics Academy of Science Ukr SSR)
(Kiev)

"Certain Nonlinear Problems of Shells of Revolution Formed by Second Order Curves"

Kiev, Prikladnaya Mekhanika, Vol 7, No 10, Oct 71, pp 31-36

Abstract: Resolving differential equations in permutations are derived for elastic shells of constant and variable thickness formed by revolution of second order curves around their symmetry axes with consideration of elastic plastic deformations. Nonlinear equations for spherical or ellipsoidal shells, paraboloids or hyperboloids of revolution are analyzed as special cases. Their approximate solution by the method of successive approximations in association with a numerical method is briefly described. Stress concentrations in a spherical shell near a circular hole with nonreinforced edges are investigated, and a numerical example is presented. Stress intensity variation on outer and inner surfaces with meridian angle are given in graphical form. The results show that the consideration of nonlinear factors affects mainly the strain, and less the stress.

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USSR

UDC 577.4

GRANBERG, A. G., CHERNYSHEV, A. A.

"Experimental Calculations of the West-East Problem"

V sb. Metody i modeli territorial'n. planir. (Methods and Models of Territorial Planning -- collection of works), vyp. 2, Novosibirsk, 1971, pp 100-137 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V521)

No abstract

1/1

USSR

UDC 612.382

CHERNYSHEV, A. A., AKSENOV, A. I., BORISOV, V. A.

"Use of Semiconductor Devices in a Radioelectronics Apparatus and Means of Increasing Its Operational Reliability"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 2(59), pp 5-10 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B560)

Translation: An expansion of the functional problems which are met by a contemporary apparatus leads to an increase of the quantity of elements entering into it. Hence there results an increase of the requirements on the reliability of semiconductor devices. Failure of semiconductor devices in an apparatus is principally produced by their incorrect use. Use of semiconductor devices in regimes exceeding the maximum permissible norms leads to gradual or sudden failure. At present, breakdowns in the use of a semiconductor device in a static regime is almost not found; breakdowns are primarily connected with the transient processes of operation of a circuit. A third category of breakdown arises with reduction of the load to an unjustifiedly small magnitude when, because of the significant effect of the back currents, instability of the load currents is increased. With the

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USSR

CHERNYSHEV, A. A., et al., Electronics Technology. Scientific-Technical
Collection. Semiconductor Devices), 1971, Issue 2(59), pp 5-10

tendency to obtain specified output characteristics by ruggedization of the
norms on the parameters of the semiconductor devices, matching them in
pairs, etc., the reliability of the apparatus is reduced. During construc-
tion of apparatus it is necessary to take into account the technological
spread and the drift of the parameters of semiconductor devices which is
not subordinated to any kind of specific law. Circuit -- construction
breakdowns (incorrect mounting in the assembly bending lead outs, etc.)
can lead to a deterioration of the electrical and thermal operating con-
ditions of the semiconductor devices. Reliability of operation of the
apparatus is also connected with the presence of methods and guidance which
determine the order and conditions of use and control of the methods of use
of semiconductor devices. At present recommendations are prepared on the
use of stabilitrons, non-housed devices and guidance is worked out on the
use of thyristors, and devices with negative resistance. Before 1975
guidance must be issued on the use of varicaps, microwave diodes, light-
emitting diodes, field-effect transistors, and others. 1 ref. I. M.

2/2

1/2   024   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--ON THE PRINCIPLES OF DESIGN OF THE CONTROL EQUIPMENT FOR
    ELECTROMAGNETIC AGITATION OF THE WELDING BATH -U-

AUTHOR--CHERNYSH, V.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 3, 1970, PP 7-8

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL CRYSTALLIZATION, SEAM WELDING, ELECTROMAGNETIC MIXING,
    WELDING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1302   STEP NO--UR/0135/70/000/003/0007/0008

CIRC ACCESSION NO--AP0123261
                        UNCLASSIFIED

TITLE--REACTION OF TRIMETHYLMETHOXYSILANE WITH TITANIUM TETRACHLORIDE -U-

AUTHOR-(02)-YASTREBOV, V.V., CHERNYSHEV, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 604-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM CHLORIDE, ORGANIC SILANE, EVAPORATION, ORGANOTITANIUM
   COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0871   STEP NO--UR/0079/70/040/003/0604/0605

CIRC ACCESSION NO--AP0124534
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124534

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 3 ML 0.38 M TICL SUB4-CCL SUB4 WAS ADDED 2.37 ML 0.479 M ME SUB3 SIOME-CCL SUB4 TO GIVE, AFTER EVAPN. IN VACUO AT ROOM TEMP., MEOTICL SUB3, DECOMP. 94-6DEGREES.   SIMILARLY WAS OBTAINED (MEO) SUB2 TICL SUB2; BOTH ARE HYDROLYZED ON CONTACT WITH AIR. NO COMPLEXES OF THESE PRODUCTS WITH ME SUB3-SIOME WERE DETECTED. THE REACTION MAY BE ALSO RUN IN CYCLOHEXANE.   FACILITY: INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

CIRC ACCESSION NO--AP0109716
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEGREE OF HYGROSCOPICITY OF
FERTILIZERS IS CHARACTERIZED BY THE RELATIVE WATER PRESSURE OVER THEIR
SATD. AQ. SOLNS.: H EQUALS (P-P0) 100. A NOMOGRAM IS PRESENTED TO FIND
THE VALUE OF H AT DIFFERENT TEMPS. (10-50DEGREES). THE STRAIGHT LINE
DRAWN FROM TEMP. TO H THROUGH THE GIVEN FERTILIZER POINT, CAN GIVE THE H
FOR ANY TEMP.

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1/2   036   UNCLASSIFIED   PROCESSING DATE--30OCT70

TITLE--NOMOGRAM FOR CALCULATING THE HEAT TRANSFER OF AQUEOUS SALT
  SOLUTIONS -U-

AUTHOR--CHERNYSHEV, A.K.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 220-1

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--HEAT TRANSFER, AQUEOUS SOLUTION, HALIDE, PERCHLORATE, NITRATE,
  BROMATE, SULFATE, CHROMATE, ACETATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0936   STEP NO--UR/0064/70/046/003/0020/0221

CIRC ACCESSION NO--AP0121538
                    UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121538

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NOMOGRAM FOR THE DETN. OF THE HEAT TRANSFER COEFF. GAMMA OF AQ. SOLN. OF 96 SALTS (HALIDES, NITRATES, CHLORATES, BROMATES, SULFATES, NITRITES, PERCHLORATES, CHROMATES, DICHROMATES, AND ACETATES OF VARIOUS ALKALI, ALK. EARTH, AND OTHER METALS) AS A FUNCTION OF THEIR CONCN. AT 20DEGREES IS PRESENTED.

UNCLASSIFIED